present invention contains 3~9 wt% of aluminum, 3.5~9 wt% of zinc, 0.15~1 wt% of manganese, 0.01~2 wt% of antimony, and balanced magnesium. The alloy may further comprise 0~2 wt.% of one element selected from the group consisting of mischmetal, calcium, and silicon. The room temperature mechanical properties of the T6 heat-treated typical alloy in the present invention are as following: Ultimate Tensile Strength of more than or equal to 270Mpa, Yield Tensile Strength of more than or equal to 140Mpa, Elongation of more than or equal to 6%, Brinell hardness of more than or equal to 70, Impact Energy of more than or equal to 12J. Some of the alloys in the present invention not only possess superior room temperature mechanical properties, but also have very good high temperature mechanical properties. The main alloying elements are easily obtainable and the preparation cost is low enough to meet the demands of large-scale production. The alloy according to the present invention was applicable for most of the casting processes, such as permanent casting, sand casting, die casting, and squeeze casting.